Amendments to the Claims

This listing of claims will replace all prior versions and listing of claims in this application. Please amend and add the new claims, as follows:

Claims

We Claim:

1. (Currently Amended) A method for producing an improved copolymerized product comprising:

melt blending polymers consisting of styrenic polymers together to give a melt blend;~~:~~

wherein said styrenic polymers are comprised of at least one ~~relatively~~ lower MFI high-impact polystyrene (~~H~~IPS) resin~~;~~ and at least one ~~relatively~~ higher MFI polystyrene homopolymer; and

extruding a product from the melt blended polystyrenes.

2. (Currently Amended) The method of claim 1 wherein the ~~H~~IPS resin has a MFI ranging from about 1.5 g/10 min. to about 15 g/10 min., and the polystyrene homopolymer has a MFI ranging from about 20 g/10 min. to about 40 g/10 min.

3. (Currently Amended) The method of claim 1 where a~~the~~ weight ratio of the HIPS resin to the polystyrene homopolymer ranges from about 90/10 to about 50/50.

4. (Currently Amended) The method of claim 1 where the product has improved melt stability as compared with a product made from the relatively low MFI HIPS resin without the relatively high MFI polystyrene homopolymer, and wherein a melt instability of an extruded polymer sample is measured according to the Equation 1:

$$\kappa_{sample} = \frac{UPL_{sample} - LPL_{sample}}{UPL_{control} - LPL_{control}} \quad \text{(Equation 1)}$$

wherein $UPL_{control}$ is the Upper Prediction Limit of a control polymer having high melt instability extrapolated to a drawing speed equal to zero,

wherein $LPL_{control}$ is the Lower Prediction Limit of the control polymer extrapolated to a drawing speed equal to zero,

wherein UPL_{sample} is the Upper Prediction Limit of the extruded polymer sample extrapolated to a drawing speed equal to zero,

wherein LPL_{sample} is the Lower Prediction Limit of the extruded polymer sample extrapolated to a drawing speed equal to zero, and

wherein κ_{sample} closer to 1 indicates a relatively unstable extruded polymer sample and a κ_{sample} closer to 0 indicates a relatively stable extruded polymer sample.

5. (Original) The method of claim 1 where the product is extruded at a shear rate from about 1,000 to about 15,000 s^{-1}.

6. (Currently Amended) A method for producing an improved copolymerized product comprising:

melt blending polymers consisting of styrenic polymers together to give a melt blend:

wherein said styrenic polymers are comprised of at least one high-impact polystyrene (HIPS) resin having a MFI ranging from about 1.5 g/10 min. to about 15 g/10 min.; and at least one polystyrene homopolymer having a MFI ranging from about 20 g/10 min. to about 40 g/10 min.;

wherein ~~a~~the weight ratio of HIPS resin to polystyrene homopolymer ranges from about 90/10 to about 50/50; and

extruding a product from the melt blended polystyrenes.

7. (Currently Amended) The method of claim 6 where the product has improved melt stability as compared with a product made from the ~~relatively low MFI~~ HIPS resin without the ~~relatively high MFI~~ polystyrene homopolymer.

8. (Withdrawn & Currently Amended) A styrenic resin blend consisting of styrenic polymers comprising at least one relatively low MFI HIPS resin and at least one relatively high MFI polystyrene homopolymer.

9. (Withdrawn & Currently Amended) The styrenic resin blend of claim 8 where the HIPS resin has a MFI ranging from about 1.5 g/10 min. to about 15 g/10 min., and the polystyrene homopolymer has a MFI ranging from about 20 g/10 min. to about 40 g/10 min.

10. (Withdrawn) The styrenic resin blend of claim 8 where the weight ratio of HIPS resin to polystyrene homopolymer ranges from about 90/10 to about 50/50.

11. (Withdrawn & Currently Amended) The styrenic resin blend of claim 8 where a product made from the resin blend has improved melt stability as compared with a product made from the ~~relatively low MFI~~ HIPS resin without the ~~relatively high MFI~~ polystyrene homopolymer.

12. (Withdrawn) A laminated article made with the styrenic resin blend of claim 8.

13. (Withdrawn & Currently Amended) A styrenic resin blend consisting of styrenic polymers comprising at least one HIPS resin having a MFI ranging from about 1.5 g/10 min. to about 15 g/10 min. and at least one polystyrene homopolymer having a MFI ranging from about 20 g/10 min. to about 40 g/10 min., wherein the weight ratio of HIPS resin to polystyrene homopolymer ranges from about 90/10 to about 50/50.

14. (Withdrawn & Currently Amended) The styrenic resin blend of claim 13 where a product made from the resin blend has improved melt stability as compared with a product made from the ~~relatively low MFI~~ HIPS resin without the ~~relatively high MFI~~ polystyrene homopolymer.

15. (Withdrawn) A laminated article made with the styrenic resin blend of claim 13.

16. (Withdrawn & Currently Amended) A product made by the process comprising:

melt blending polymers consisting of styrenic polymers together to give a melt ~~blend;~~:

wherein said styrenic polymers are comprised of at least one relatively low MFI HIPS resin~~;~~ and at least one relatively high MFI polystyrene homopolymer; and

extruding the product from the melt blended polystyrenes.

17. (Withdrawn & Currently Amended) The product of claim 16 where the HIPS resin has a MFI ranging from about 1.5 g/10 min. to about 15 g/10 min., and wherein the polystyrene homopolymer has a MFI ranging from about 20 g/10 min. to about 40 g/10 min.

18. (Withdrawn) The product of claim 16 where the weight ratio of HIPS resin to polystyrene homopolymer ranges from about 90/10 to about 50/50.

19. (Withdrawn) The product of claim 16 where the product has improved melt stability as compared with a product made from the relatively low MFI HIPS resin without the relatively high MFI polystyrene homopolymer.

20. (Withdrawn) The product of claim 16 where the product is extruded at a shear rate from about 1,000 to about 15,000 s^{-1}.

21. (Withdrawn & Currently Amended) A product made by a process comprising:
melt blending together to give a melt blend:
at least one HIPS resin having a MFI ranging from about 1.5 g/10 min. to about 15 g/10 min.; and
at least polystyrene homopolymer having a MFI ranging from about 20 g/10 min. to about 40 g/10 min.;
where the weight ratio of HIPS resin to polystyrene homopolymer ranges from about 90/10 to about 50/50 and
extruding the product from the melt blend.

22. (Withdrawn & Currently Amended) The product of claim 21 where the product has improved melt stability as compared with a product made from the relatively low MFI HIPS resin without the relatively high MFI polystyrene homopolymer.

23. (Withdrawn) A method of measuring the melt instability of an extruded polymer sample according to the Equation 1:

$$\kappa_{sample} = \frac{UPL_{sample} - LPL_{sample}}{UPL_{control} - LPL_{control}} \qquad \text{(Equation 1)}$$

where $UPL_{control}$ is the Upper Prediction Limit of a control polymer having high melt instability extrapolated to a drawing speed equal to zero,

$LPL_{control}$ is the Lower Prediction Limit of the control polymer extrapolated to a drawing speed equal to zero,

UPL_{sample} is the Upper Prediction Limit of the extruded polymer sample extrapolated to a drawing speed equal to zero, and

LPL_{sample} is the Lower Prediction Limit of the extruded polymer sample extrapolated to a drawing speed equal to zero,

where κ_{sample} closer to 1 indicates a relatively unstable extruded polymer sample and a κ_{sample} closer to 0 indicates a relatively stable extruded polymer sample.

24. (Withdrawn) The method of claim 23 where the control polymer and the sample polymer are selected from the group consisting of styrene polymers and styrene copolymers.

25. (New) An article made from the styrenic resin blend of claim 1.

26. (New) The method of claim 1 where the product has a melt strength [N] of from 0.01 to 0.035.

27. (New) The method of claim 1 where the product has an instability kappa of from 0.2 to 0.045.

28. (New) The method of claim 1 where the product has an Izod of from 0.8 to 1.7.

29. (New) The method of claim 1 where the product has a flexural strength of from 8000 psi to 10500 psi.

30. (New) The method of claim 1 where the product has a Z average molecular weight (Mz) of from about 300,000 to 600,000.